

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

EDINBURGH.—Prof. J. Walker, F.R.S., has been elected to the chair of chemistry in the University in succession to Prof. A. Crum Brown, F.R.S.

LIVERPOOL.—Prof. Salvin-Moore has resigned the directorship of the Liverpool Cancer Research Committee, and accordingly vacates the professorship of experimental cytology in the University on September 30.

A VOLUME about Canada in Sir C. P. Lucas's "Historical Geography of the British Colonies" will be published shortly by the Oxford University Press. The author, Prof. H. E. Egerton, confines himself to history. Mr. J. D. Rogers, who wrote "Australasia" for the same series, will deal with the geography of Canada in another part.

THE following appointments have been made at University College, London:—Mr. H. M. Hobart to the newly-created lectureship in electrical design; Dr. A. W. Stewart to the lectureship in stereochemistry for the session 1908-9; Mr. G. C. Mathison to the Sharpey research scholarship in physiology; Mr. W. F. Stanton to be demonstrator in the department of applied mathematics; and Mr. H. S. Bion to be demonstrator in the department of geology.

THE Association of Technical Institutions held its summer meeting on July 17 at the Franco-British Exhibition. The chair was taken by Sir Horace Plunkett and Dr. Friedel, head of the Information Bureau of French Education, who gave an address on the French educational system. Dr. Friedel said that the most interesting development of higher education in France is that at the Universities pupils can get special instruction in their various technical pursuits, including agriculture and watch-making, so that technological education now goes from the elementary stage right up to the University. Municipalities do a great deal for their Universities; they give money, found chairs, build laboratories, and endow all kinds of institutions connected with the Universities. Perhaps the time will come, he said, when English towns will do more than they do at present in that direction. Sir Philip Magnus also spoke.

SOCIETIES AND ACADEMIES.

LONDON.

Mineralogical Society, June 16.—Prof. H. A. Miers F.R.S., president, in the chair.—A nickel-iron alloy (Fe_3Ni_3) common to the meteoric iron of Youndegin and the meteoric stone of Zomba: L. Fletcher. In the case of the Zomba meteoric stone, the gradual increase of nickel in the residue after repeated extraction of the nickel-iron with mercuric ammonium chloride was previously attributed to rusting. It is now explained by the presence in the nickel-iron of a component not easily affected by the mercuric solution and containing 38.50 per cent. of nickel. This component is identical with the "tenite," containing about the same percentage of nickel, which was separated from the Youndegin iron by its insolubility in dilute hydrochloric acid.—Kaolinisation and other changes in West of England rocks: F. H. Butler. The author pointed out that the gaseous emanations of a granitic magma, which are carried upwards and discharged externally, gradually bring about considerable pneumatolytic changes. Notable among these are increased vesicularity in the quartz of the peripheral part of granitic intrusions and their offsets, the elvans, also the assumption by that mineral of the idiomorphic form, and the production of tourmaline. The occurrence of tourmaline in rocks exemplifying various stages in metasomatism indicates long-continued supply of boron compounds from abysmal regions. The primary, usually brown, tourmaline in the altered acidic rocks is commonly found to have been eroded, doubtless owing to alkalinity of the kaolinising solution, before dekaolinisation and the consequent formation of acicular schorl ushered in a final deposition of quartz. The view of Prof. Vogt and other authorities that kaolinisation was effected by the rise of solutions of carbon dioxide from among calciferous rocks receives support from the occurrence of calcium sulphate in

underground waters and of numerous calcium compounds in mineral veins and lodes. The unchanged condition of some topaziferous granite is one of various indications that the action of hydrofluoric acid on rocks has been low down rather than superficial. It or hydrofluosilicic acid appears to have played a part in the following sequence of events in the west of England:—(1) Decomposition of deep-seated calcite-bearing rocks, and consequent kaolinisation of neighbouring granite by evolved carbon dioxide; (2) local and variable dekaolinisation, fluorisation, and tourmalinisation of china-clay rock and china-stone by borated waters carrying dissolved fluor-spar, resulting in the formation of schorlaceous rocks and greisen. (3) Lastly, supply to the metasomatised rocks of tinstone and wolfram from solution, and then of silica. The author concluded with a brief summary of facts subversive of the popular notion that the kaolin of commerce is the result of subaerial action upon granite.—Schwartzembergite, and the drawing of light-figures: G. F. Herbert Smith. The author described the crystals occurring on three specimens in the British Museum, the locality being San Rafael, Chili. They are formed of four low pyramids, above and below, eight in all, with nearly square contour, the angle from the centre averaging 20° , with range 15° – 25° , and simulate tetragonal symmetry; steep pyramids are occasionally present also. The mean refraction is 2.350. The optical characters are remarkable; through each pyramid face appears in convergent light a biaxial interference-figure ($2E=16^\circ$) with negative birefringence, the axial plane being parallel to the edge of the contour, but through intermediate sectors appears another biaxial interference-figure with larger angle ($2E=33^\circ$), the axial plane being in this case radial; the number of different directions of single refraction in the crystal is, however, only four. The pyramids give with pin-hole object a continuous band of light. Since there was no well-defined image from which to measure, it was necessary to draw these figures direct on to a projection. The author described a camera-lucida attachment for the goniometer which would allow of the preparation of projections of different sizes and of the relative variation required by the distortion in a projection.—The chemical composition of seligmannite: G. T. Prior. The results of two analyses show that this new mineral from the Binnenthal is a sulph-arsenite of copper and lead (PbCuAsS_3) corresponding to the sulph-antimonite, bournonite, with which it is crystallographically similar.

DUBLIN.

Royal Dublin Society, June 16.—Prof. Sydney Young, F.R.S., in the chair.—On the quantitative spark spectra of titanium, uranium, and vanadium: Dr. J. H. Pollok. Tables were given showing the rate of disappearance of the various lines of the spectra of each element on dilution, and reproductions of the spectra were shown in which the most characteristic and persistent groups of lines were marked. A second paper, "On the Spectrographic Analysis of a Sample of Commercial Thallium," illustrated the most convenient method of using quantitative spectra for the identification of small quantities of impurities in metals or minerals.—The secondary β radiation excited by γ rays: F. E. Hackett. The method used was to measure the ionisation produced by the β radiation emitted from the back of a plate when γ rays were incident on the front, care being taken that the intensity of the γ rays issuing from the different plates was the same. The plates were thick enough to absorb the β rays present in the incident pencil, so that the secondary radiation measured was due solely to γ rays. For substances of atomic weight less than 130, the secondary radiation measured in this way is almost constant, and equal to 70 on the scale used. For higher atomic weights the secondary radiation increases, reaching the value of 100 for lead and 120 for uranium. The paper contains a theoretical discussion of the subject, deducing the radiating power per unit volume and per atom of the substances examined when subjected to the same intensity of γ rays. The paper also contains some measurements of the penetrating power of the secondary rays.—The occurrence of deposits of unbroken marine shells at high levels on the Curraun Peninsula, co. Mayo: T. E. Gordon and Prof. A. F. Dixon. The authors described several deposits of unbroken marine shells

occurring in relatively enormous numbers at the foot of cliff-like terraces of the Old Red Sandstone, lying mostly in recesses beneath overhanging rocks or deep in narrow clefts. The shells were found at heights of 100, 300, and 700 feet above sea-level. The unbroken condition of the shells, their enormous number, their presence in deep, horizontal, narrow rock clefts, and the fact that they were found so far as half a mile from the sea coast, high on the side of a barren mountain, led the authors to the conclusion that their presence was not due to human agency or to birds. The appearances suggest that the shells, which are all of littoral species, were left behind on a rocky coast by a receding sea. In spite of the geological difficulties of such a suggestion, the authors had no other to offer.—Curious water-worn markings on rocks at Doughbeg, co. Mayo: T. E. Gordon and Prof. A. F. Dixon. Rounded and horse-shoe shaped markings regarded by the authors as due to the action of water containing sand or grit pouring down a smooth, sloping rock surface on which were a number of projecting pieces of vein quartz.—Dry rot of the potato tuber: Dr. G. H. Pethybridge and E. H. Bowers. The authors dealt with a case in which the dry-rot fungus *Fusarium Solani* was the cause of considerable trouble. Inoculation experiments were carried out with this fungus (including a pure culture of it) which show that it is a true parasite.—An investigation of the connection between band and line spectra of the same metallic elements: Prof. W. N. Hartley.

PARIS.

Academy of Sciences, July 13.—M. Bouchard in the chair.—Notice on Alphonse Peron, correspondant of the Academy, whose death occurred at Auxerre, July 2, 1908: M. Douvillé.—A hypothesis by means of which the variations of the radius vector of the sun can be obtained, without necessitating the consideration of the sun's apparent diameters: J. Boussinesq.—The lava from the recent eruption of Etna: A. Lacroix. Details are given of the petrographical study of different lavas: three chemical analyses of products of different origin show very slight differences.—A hæmoglobarian from *Morelia spilotis*: A. Laveran. A description of an organism apparently identical with *H. Shattocki*, with ten diagrams showing various stages of development.—The action of metallic oxides on the primary alcohols: the case of irreducible oxides: Paul Sabatier and A. Mailhe.—The oxides MnO, SnO, and CdO give hydrogen and the aldehyde at 340° to 350° C., but the action is less rapid than with reduced copper. The blue oxide of tungsten and the oxides of aluminium and thorium give ethylene and water. Many oxides (chromium, silica, titanium, zinc, &c.) act catalytically in both ways, aldehyde, hydrogen, ethylene, and water being produced.—The partial eclipse of the sun of June 28, 1908, observed at the Observatory of Ebra (Spain): M. Cifera. The actinometric observations were hindered by clouds, which rendered uncertain the determination of the time of the first contact.—The eclipse of the sun of June 28, 1908, observed at the University of Strasburg: Robert Jonckheere. The observations of the times of the first and second contacts were satisfactory.—Observation of the partial eclipse of the sun of June 28, 1908, at the Observatory of Bordeaux: F. Courty.—The history of lunar relief: P. Puiseux.—Certain systems of differential equations: Edmond Maillet.—Canonical products of infinite genus: Arnaud Denjoy.—Positive electrons: Jean Becquerel. In a previous note the author has described certain phenomena which appear to indicate the existence of positive electrons. In the present paper other possible explanations are examined in detail, but found to be experimentally untenable; the hypothesis of the formation of positive electrons thus remains the best available to explain the observed phenomena.—Remarks on a note by M. Tissot, "On the Use of Detectors sensitive to Electrical Oscillations, based on Thermoelectric Phenomena": Edouard Branly.—The mechanism of synthesis of rings containing nitrogen.—The action of ethyl pyruvate upon paratoluidine: L. J. Simon.—Sparteine. The conversion of isosparteine into α -methylvsparteine: Amand Valeur.—Researches on some acid sulphates of potassium: L.

Arzalier.—Osmotic pressure and the Brownian movement: Jacques Duclaux.—The physico-chemical analysis of wines: Paul Dutoit and Marcel Duboux. The determination of the sulphates, total acidity, and tanning materials of a wine can be done in an hour by measuring the changes in the electrical conductivity caused by the gradual addition of baryta solution.—The stigma-bearing nucleus and pollinisation in *Saxe-Gothea conspicua*: A. Tison.—The influence of the concentration of solutions of some sugars on respiration in plants: A. Maige and G. Nicolas.—The grafting of some varieties of beans: Lucien Daniel.—The mechanism of the distribution of products possessing smell in the plant: Eug. Charabot and G. Lalone.—The chemical study of the ripening of *Lycopersicum esculentum* (tomato): F. M. Albahary. As the tomato ripens, the amounts of organic acids, sugar, starch, and nitrogenous materials other than proteids increase, whilst the proteids and cellulose diminish.—The influence of amyl nitrite on the red globules of the blood: Gr. Flavu.—The rôle of the malic acid fermentation in vinification: A. Rosenstiehl.—The physiological rôle of the leucocytic granulations: M. Kollmann.—The discovery of fossil plants in the volcanic earths of Aubrac: Ant. Lauby.

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